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Spring 2015

### ENVH 7231 - Air Quality

Simone M. Charles

*Georgia Southern University, Jiann-Ping Hsu College of Public Health*

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**Georgia Southern University**  
**Jiann-Ping Hsu College of Public Health**

ENVH 7231 –Air Quality  
Spring 2015  
CRN: 15194

<b><u>Instructor:</u></b>	Simone M. Charles, Ph.D.
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<b><u>Office Hours:</u></b>	Wednesdays – 10:00-4:00 p.m.
<b><u>Web Page:</u></b>	<a href="http://jphcoph.georgiasouthern.edu/">http://jphcoph.georgiasouthern.edu/</a>
<b>Class Meets:</b>	Wednesdays – 6:00 pm-to-8:45 pm IT Building Room #2202

Course schedules can be found at: <http://www.collegesource.org/cat209/116208.pdf>

**Prerequisites:** N/A

**Web-CT Address:**

**Catalog Description:** Introduces students to chemical, physical, and biological principles of air quality, as well as potential sources of contamination and the resulting effects. The course will also introduce environmental policies pertinent to air issues along with current remediation strategies to ameliorate pollution.

**Required Textbook:** Vallero, Daniel. (2008) Fundamentals of Air Pollution, 4<sup>th</sup> Edition, Elsevier Inc.  
The textbook is available in the Georgia Southern University Store.

**Reference Textbooks:** Godish, Thad. (2004) *Air Quality*, 4<sup>th</sup> Edition, CRC Press LLC.

**Environmental Health Concentration Competencies:**

*At the completion of this program the student will be able to:*

1. Analyze statistical environmental data using appropriate methods and present the results in a meaningful way to different types of audiences.
2. Assess environmental justice issues in both rural and urban communities along with government and community organizations that are resources on environmental health issues.

3. Apply principles and tools of environmental risk assessment in completing a comprehensive quantitative risk assessment of potentially hazardous environmental and workplace settings
4. Apply principles and tools of environmental risk assessment in completing a comprehensive qualitative risk assessment, including onsite evaluations, of potentially hazardous environmental and workplace settings.
5. Analyze the effectiveness of principles and tools of environmental prevention and control program development in addressing community concerns about environmental hazards.
6. Analyze the effectiveness of principles and tools of environmental prevention and control program development in addressing environmental hazards.
7. Apply principles and tools of effective risk communication in addressing environmental hazards.
8. Differentiate federal, state and local regulatory programs, guidelines, and authorities that control environmental health issues and the applicability of each.
9. Articulate the interrelationships between environmental health with economic, political, and social factors in the development of environmental policy.
10. Analyze the susceptibility of differing populations to environmental exposures with emphasis on physiologic and psychosocial factors including genetic predispositions.
11. Analyze toxicological data to determine exposure potential and health effects related to exposure to prevalent environmental toxins.
12. Analyze the interactions of biological, chemical and physical agents within the environment and their impacts on human health including the impacts of biogeochemical cycles.
13. Investigate environmental conditions that may affect a community's health status, and provide technical assistance and leadership to address the concerns of communities.
14. Design project specific sampling plans to delineate health related environmental hazards.
15. Analyze the effectiveness or performance of international, national and state procedures, interventions, treaties, programs, and regulatory guidelines pertaining to environmental issues.
16. Articulate the cultural, social, economic and behavioral factors that affect health problems influenced by environmental hazard exposure.
17. Describe the integration of environmental health into land use planning and design that would ensure communities have healthy environments and encourage healthy behaviors.

**Course Learning Objectives:** The number in parenthesis corresponds to the competency number obtained from this course (from the list above) satisfied by the course learning objectives.

*As a result of this course the student should be able to:*

1. Analyze the effectiveness of principles of environmental prevention as related to air systems (6).
2. Analyze the effectiveness of principles of environmental control as related to air systems (6).
3. Analyze the effectiveness of tools of environmental prevention as related to air systems (6).
4. Analyze the effectiveness of tools of environmental control as related to air systems (6).
5. Compare and contrast federal, state and local regulatory programs that control environmental health issues as related to air systems (8).
6. Compare and contrast federal, state and local regulatory guidelines that control environmental health issues as related to air systems (8).
7. Compare and contrast federal, state and local regulatory authorities that control environmental health issues as related to air systems (8).
8. Describe the applicability of each level of regulations as related to environmental health issues as related to air systems (8).
9. Analyze the interactions of biological agents within the environment as related to air systems (12).
10. Analyze the interactions of chemical agents within the environment as related to air systems (12).
11. Analyze the interactions of physical agents within the environment as related to air systems (12).
12. Analyze the impacts of the three types of environmental agents on human health including the impacts of biogeochemical cycles as related to air systems (12).
13. Analyze the effectiveness of multi-level procedures pertaining to air quality issues (15).
14. Analyze the effectiveness of multi-level interventions pertaining to air quality issues (15).
15. Analyze the effectiveness of multi-level programs pertaining to air quality issues (15).

### Overview of the Content to be Covered During the Semester:

Week/Date	Topic	Readings	Assignment
1 01/14/15	Introduction Air Pollution Overview of Atmosphere Atmospheric meteorology Atmospheric phenomena	Text Chapters 1, 2, 4, 5	None
2 01/21/15	Atmospheric pollutants (natural, anthropogenic, scales)	Text Chapters 3, 6, 7	None
3 01/28/15	Indoor air pollutants	Text Chapters 25	Present scientific article
4 02/04/15	FIELD EXERCISE In-home air quality assessment		
5 02/11/15	<b>Exam #1 (In-Class)</b>	None	None
6 02/18/15	Atmospheric effects of pollutants	Text Chapters 6, 7, 8, 9, 10	Present scientific article
7 02/25/15	Health effects of pollutants Welfare effects of pollutants	Text Chapters 11, 12, 13, 14	Present scientific article
8 03/04/15	Air/Soil contamination and Environmental Justice	Handouts	Present scientific article
9 03/11/15	<b>Exam #2 (In-Class)</b>	None	None
10 03/18/15	SPRING BREAK – ENJOY!!!		
11 03/25/15	Global Warming & Climate Change	Text Chapters 15	Present scientific article
12 04/01/15	Regulation and public policy	Text Chapters 26,	Present scientific article
13 04/08/15	Air pollution monitoring and surveillance	Text Chapters 18, 36	Present scientific article
14 04/15/15	Air quality criteria and standards – Conversion of data and criteria to standards	Text Chapters 24, 27,	Present scientific article
15 04/22/15	Control of pollutants	Text Chapters 28, 30, 31, 34, 35	Present scientific article
16 04/29/15	Student presentations on In-Home Assessment Findings and Report	None	None <b><i>Submit final report on</i></b>

			<i>assessment</i>
17 05/06/15	<b>Final Exam</b> (6:00pm IT 2202) <b>(In-Class)</b>	None	<i>Submit final exam</i>

*Samples of your work may be reproduced for search purposes and/or inclusion in the professor's teaching portfolio. You have the right to review anything selected for use, and subsequently ask for its removal.*

**Instructional Methods:** Class meetings will be a combination of:

- (1) Lecture
- (2) In class discussions of current scientific literature and topics of global relevance
- (3) Examinations/In class practice exercises

Written homework assignments, class presentations, and examinations constitute the basis of student evaluation.

**Final Examination:** Wednesday, May 06, 2015 6:00 PM  
(or take home exam at the class discussion)

**Grading:** Weighting of assignments for purposes of grading will be as follows:

<i>Assignments</i>	<i>Learning Objective</i>	<i>Points</i>
In-home assessment	1-4; 8-15	80
Exam #1	1-4; 9-12	80
Exam #2	1-4; 9-12	80
Student in-class lead discussion of scientific literature review of air quality topic	1-15	30
Formal class presentation on in-home assessment	1-15	50
Final exam	1-15	80

The following point scale will be utilized in grading:

360-to-400 points	(90%)	A
320-to-359 points	(80%)	B
280-to-319 points	(70%)	C
240-to-279 points	(60%)	D

For calculation of your final grade, all grades above will be included.

Your grades **will not** be posted. All exams and assignments will be graded using a rubric and returned promptly so that students may accurately calculate their grades at any point in time during the semester.

No assignments will be re-graded. The grade obtained when graded once will be your grade for that assignment. **ALL GRADES ARE FINAL.**

Any assignments submitted AFTER the due date and time, will NOT be graded.

There are times when extraordinary circumstances occur (e.g., serious illness, death in the family, etc.). In such circumstances, and/or if you need additional time to satisfactorily complete any course requirement, please consult with the instructor within a reasonable amount of time. *Nota Bene:* Extensions are not guaranteed and will be granted solely at the discretion of the instructor.

**Academic Misconduct:** As a student registered at this University, it is expected that you will adhere to only the strictest standards of conduct. It is recommended that you review the latest edition of the *Student Conduct Code* book, as well as the latest *Undergraduate & Graduate Catalog* to familiarize yourself with the University's policies in this regard. Your continued enrollment in this course is an implied contract between you and the instructor on this issue; from this point forward, it is assumed that you will conduct yourself appropriately.

Academic integrity relates to the appropriate use of intellectual property. The syllabus, lecture notes, and all materials presented and/or distributed during this course are protected by copyright law. Students are authorized to take notes in class, but that authorization extends only to making one set of notes for personal (and no other) use. As such, students are not authorized to sell, license, commercially publish, distribute, transmit, display, or record notes in or from class without the express written permission of the instructor.

"According to the Academic Dishonesty Policy of GSU, **plagiarism** includes (but is not limited to):

***A. Directly quoting the words of others without using quotation marks or indented format to identify them.***

***B. Using published or unpublished sources of information without identifying them.***

***C. Paraphrasing material or ideas without identifying the source.***

***D. Unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic material.***

If you are accused of plagiarism by a JPHCOPH faculty, the following policy, as per the Judicial Affairs website will be enforced: (<http://students.georgiasouthern.edu/judicial/faculty.htm> )

## **PROCEDURES FOR ADJUDICATING ACADEMIC DISHONESTY CASES**

### ***First Offense - In Violation Plea***

1. If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, the professor should contact the Office of Judicial Affairs to determine if this is a

first violation of academic dishonesty. The incident will be reported via the following website:

<http://students.georgiasouthern.edu/judicial/faculty.htm>

2. If it is a first violation, the professor should talk with the student about the violation. If the student accepts responsibility in writing and the professor decides to adjudicate the case, the following procedures will be followed:
  - a. The student will be placed on disciplinary probation for a minimum of one semester by the Office of Judicial Affairs.
  - b. The student will be subject to any academic sanctions imposed by the professor (from receiving a 0 on the assignment to receiving a failing grade in the class).
  - c. A copy of all the material involved in the case (Academic Dishonesty Report Form and the Request For Instructor to Adjudicate Form) and a brief statement from the professor concerning the facts of the case and the course syllabus should be mailed to the Office of Judicial Affairs for inclusion in the student's discipline record.

*First Offense - Not In Violation Plea* (student does not admit the violation)

If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, the professor should contact the Office of Judicial Affairs to determine if this is the first or second violation of academic dishonesty. The student will be charged with academic dishonesty and the University Judicial Board or a University Hearing Officer would hear the case. If the student is found responsible, the following penalty will normally be imposed:

1. The student will be placed on Disciplinary Probation for a minimum of one semester by the Office of Judicial Affairs.
2. The student will be subject to any academic sanctions imposed by the professor.

*Second Violation of Academic Dishonesty*

If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, and if it is determined this is the second violation, the student will be charged with academic dishonesty and the University Judicial Board or a University Hearing Officer would hear the case. If the student is found responsible, the following penalty will normally be imposed:

1. Suspension for a minimum of one semester or expulsion
2. The student will be subject to any academic sanctions imposed by the professor.

*NOT RESPONSIBLE FINDING*

When a student is found not responsible of academic dishonesty, the work in question (assignment, paper, test, etc.) would be forwarded to the



Department Chair. It is the responsibility of the Department Chair to ensure that the work is evaluated by a faculty member other than the individual who brought the charge and, if necessary, submit a final grade to the Registrar. For the protection of the faculty member and the student, the work in question should not be referred back to the faculty member who charged the student with academic dishonesty.

In the case of a Department Chair bringing charges against a student, an administrator at the Dean's level will ensure that the student's work is evaluated in an appropriate manner.

**Academic Handbook:** Students are expected to abide by the Academic Handbook, located at <http://students.georgiasouthern.edu/sta/guide/>. Your failure to comply with any part of this Handbook may be a violation and thus, you may receive an F in the course and/or be referred for disciplinary action.

**University Calendar for the Semester:** The University Calendar is located with the semester schedule, and can be found at:  
<http://students.georgiasouthern.edu/registrar/Spring2007.html>

**Attendance Policy:** Federal regulations require attendance be verified prior to distribution of financial aid allotments. Attendance will not be recorded after this initial period.

**One Final Note:** The contents of this syllabus are as complete and accurate as possible. *The instructor reserves the right to make any changes necessary to the syllabus and course material.* The instructor will make every effort to inform students of changes as they occur. It is the responsibility of the student to know what changes have been made in order to successfully complete the requirements of the course.